

Appl. No. 10/656,010
Amendment dated May 10, 2004
In Response to Notice of Non-Compliant
Amendment dated April 28, 2004

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A nickel-chromium-molybdenum alloy capable of being aged hardened for improved strength while maintaining high corrosion resistance, having a composition comprised in weight percent of:

19.5 to 22	chromium
15 to 17.5	molybdenum
up to 3	iron
up to 1.5	manganese
up to 0.5	aluminum
up to 0.02	carbon
up to 0.015	boron
up to 0.5	silicon
up to 1.5	tungsten

with a balance of nickel and impurities, metallic impurities hafnium, tantalum and zirconium each up to 0.5 wt. %, wherein the alloy has a P value of from 33.5 to 35.9, P being defined as:

$$P = 2.64 \text{ Al} + 0.19 \text{ Co} + 0.83 \text{ Cr} - 0.16 \text{ Cu} + 0.39 \text{ Fe} + 0.52 \text{ Hf} + 0.59 \text{ Mn} + 1.0 \text{ Mo} + 0.68 \text{ Nb} + 2.15 \text{ Si} + 1.06 \text{ V} + 0.39 \text{ W} + 0.45 \text{ Ta} + 1.35 \text{ Ti} + 0.81 \text{ Zr}$$

where the elemental compositions are given in weight percent.

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2. (Original) The nickel-chromium-molybdenum alloy of claim 1, also comprising in weight percent:

up to 2.5	cobalt
up to 1.25	niobium
up to 0.7	titanium
up to 0.2	vanadium

3. (Original) The nickel-chromium-molybdenum alloy of claim 1, comprising up to 3.5 wt.% copper

4. (Original) The nickel-chromium-molybdenum alloy of claim 1, wherein the impurities comprise levels of at least one of sulfur, phosphorus, oxygen, nitrogen, magnesium, and calcium.

5. (Previously Presented) The nickel-chromium-molybdenum alloy of claim 1, wherein the alloy is in a wrought form selected from the group consisting of sheets, plates, bars, wires, tubes, pipes, and forgings.

6. (Original) The nickel-chromium-molybdenum alloy of claim 1, wherein the alloy is in cast form.

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7. (Original) The nickel-chromium-molybdenum alloy of claim 1, wherein the alloy has been spray-formed.

8. (Original) The nickel-chromium-molybdenum alloy of claim 1, wherein the alloy is in powder metallurgy form.

9. (Original) A nickel-chromium-molybdenum alloy capable of being age hardened for improved strength while maintaining high corrosion resistance, having a composition comprised in weight percent of:

19.9 to 21.4 chromium

15.1 to 17.4 molybdenum

up to 2 iron

0.1 to 0.4 manganese

0.1 to 0.4 aluminum

up to 0.01 carbon

up to 0.008 boron

up to 0.1 silicon

up to 1.0 tungsten

with a balance of nickel and impurities, metallic impurities hafnium, tantalum and zirconium each up to 0.2 wt. %, wherein the alloy has a P value of from 34.0 to 35.9, P being defined as:

$$P = 2.64 Al + 0.19 Co + 0.83 Cr - 0.16 Cu + 0.39 Fe + 0.52 Hf + 0.59 Mn + 1.0 Mo +$$

$$0.68 Nb + 2.15 Si + 1.06 V + 0.39 W + 0.45 Ta + 1.35 Ti + 0.81 Zr$$

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where the elemental compositions are given in weight percent.

10. (Original) The nickel-chromium-molybdenum alloy of claim 9, also comprising in weight percent:

up to 1	cobalt
up to 0.2	niobium
up to 0.2	titanium
up to 0.2	vanadium

11. (Original) The nickel-chromium-molybdenum alloy of claim 9, also comprising up to 0.5 wt.% copper.

12. (Currently Amended) A nickel-chromium-molybdenum alloy capable of being age hardened for improved strength while maintaining excellent corrosion resistance, having a composition comprised in weight percent of:

19.92 to 21.41	chromium
15.11 to 17.38	molybdenum
from 0.94 to 2.76	iron
from 0.29 to 1.18	manganese
from 0.11 to 0.21	aluminum
from 0.003 to 0.011	carbon
up to 0.003	boron

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up to 0.07	silicon
from 0.09 to 1.06	tungsten
from 0.04 to 2.29	cobalt
from 0.01 to 1.19	niobium
up to 0.46	titanium
up to 0.16	vanadium
up to 0.02	tantalum

with a balance of nickel and impurities, metallic impurities hafnium, tantalum and zirconium each up to 0.5 wt. %, wherein the alloy has a P value of from 33.7 to 35.9, P being defined as:

$$P = 2.64 \text{ Al} + 0.19 \text{ Co} + 0.83 \text{ Cr} - 0.16 \text{ Cu} + 0.39 \text{ Fe} + 0.52 \text{ Hf} + 0.59 \text{ Mn} + 1.0 \text{ Mo} + 0.68 \text{ Nb} + 2.15 \text{ Si} + 1.06 \text{ V} + 0.39 \text{ W} + 0.45 \text{ Ta} + 1.35 \text{ Ti} + 0.81 \text{ Zr}$$

where the elemental compositions are given in weight percent.

13. (Previously Presented) The nickel-chromium-molybdenum alloy of claim 12, also comprising 0.01 to 0.05 wt.% copper.

14. (Original) The nickel-chromium-molybdenum alloy of claim 13, wherein the impurities comprise levels of at least one of sulfur, phosphorus, oxygen, nitrogen, magnesium, and calcium.

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15. (Previously Presented) The nickel-chromium-molybdenum alloy of claim 13, wherein the alloy is in a wrought form selected from the group consisting of sheets, plates, bars, wires, tubes, pipes, and forgings.

16. (Original) The nickel-chromium-molybdenum alloy of claim 13, wherein the alloy is in cast form.

17. (Original) The nickel-chromium-molybdenum alloy of claim 13, wherein the alloy has been spray-formed.

18. (Original) The nickel-chromium-molybdenum alloy of claim 13, wherein the alloy is in powder metallurgy form.